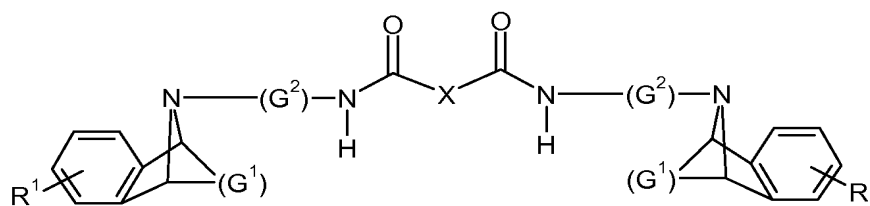


Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A compound of the formula ~~according to formula (I)~~
~~below, having the structure:~~



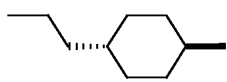
Formula (I)

wherein:

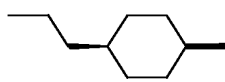
R^1 is selected from the group consisting of hydrogen, halogen, C_{1-4} alkyl, C_{1-4} alkanoyl and aroyl;

G^1 ~~represents~~ is CH_2-CH_2 or $CH=CH$;

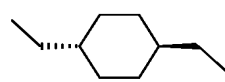
G^2 represents C_{4-7} alkyl or a group of the formula (a), (b) or (c):



(a)



(b)



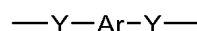
(c)

;

X represents a group of the formula (d), ~~(e)~~ or (f):



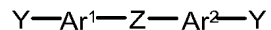
(d)



(d)



(e)



(f)

wherein

Y is, independently, selected from the group consisting of a bond, O, S, NR^2 , - NR^2 - C_{1-4} alkyl-, and C_{1-4} alkyl- each of these alkyl groups may contain a heteroatom selected from O, NR^2 , or S;

R^2 ~~represents a~~ is hydrogen, C_{1-4} alkyl or C_{1-4} alkyl-aryl;

~~Ar, Ar¹ and Ar² are, independently, is~~ selected from the group consisting of an optionally substituted phenyl rings, optionally substituted 5- or 6- membered aromatic heterocyclic rings or an optionally substituted, fused bicyclic or tricyclic aromatic or heteroaromatic ring systems;

~~L is, independently, selected from the group consisting of a bond, optionally substituted C₁₋₄ alkanoyl, C₁₋₄ alkenyl, C₁₋₄ alkynyl or C₁₋₁₈ alkyl which may contain between 0 and 3 heteroatoms independently selected from O, NR², or S; Also, atoms within L may be joined to form up to 3 rings and additionally L may be have up to 3 aryl, heteroaryl or CO₂R² substituents; Z represents a bond, O, NR², S, C₁₋₄ alkylidene or C₁₋₄ alkyl .~~

2. (currently amended) A compound according to claim 1 selected from the group consisting of:

N-{4-[2-(-(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl)-ethyl]-cyclohexyl}-2-[2-(-(4-[2-(-(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl)-ethyl]-cyclohexylcarbamoyl)-methyl)-phenyl]-acetamide;
2,2'-benzene-1,3-diylbis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)acetamide];
N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)-N'-{4-[(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)amino]carbonyl]amino)methyl]phenyl}urea;
N',N'''-(benzene-1,3-diyl)dimethanediylbis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];
~~N',N''' 1,2-propanediylbis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];~~
~~N',N''' 1,6-hexanediylbis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];~~
~~N',N''' [(methylimino)di-2,1-ethanediyl]bis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];~~
~~N',N''' 1,2-butanediylbis[N-(*trans*-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];~~

~~N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)-N''-{15-[(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)amino]-15-oxo-4,7,10-trioxa-14-azapentadec-1-yl}urea;~~

~~N',N'''-1,4-butanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea];~~

~~N',N'''-(thiodi-2,1-ethanediyl)bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea];~~

~~N',N'''-1,2-ethanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea];~~

~~N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)-N'-[3-(((trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)amino)carbonyl)amino)-2,2-dimethylpropyl]urea;~~

~~N',N'''-1,2-cyclohexanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea];~~

~~2,2'-benzene-1,4-diylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]acetamide] trifluoroacetate;~~

~~2,2'-benzene-1,3-diylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]acetamide] trifluoroacetate;~~

~~N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)-N'-[[5-(((2-(((trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl)amino)carbonyl)amino)ethyl]thio)methyl)-2-furanyl)methyl]urea;~~

~~N',N'''-(2,3-naphthalenediyl)dimethanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea];~~

~~N',N'''-1,12-dodecanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea] trifluoroacetate;~~

~~N',N'''-[benzene-1,2-diylbis(oxy-2,1-ethanediyl)]bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]undeca-2,4,6-trien-11-yl}ethyl)cyclohexyl]urea] trifluoroacetate;~~

~~N',N''' (benzene-1,3-diyl-di-2,1-ethanediyl)bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea] trifluoroacetate;~~

~~N',N''' (benzene-1,4-diyl-di-2,1-ethanediyl)bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea] trifluoroacetate;~~

~~N',N''' (1,3-cyclohexanediyldimethanediyl)bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea] trifluoroacetate;~~

~~N',N''' 1,11-undecanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea] trifluoroacetate;~~

~~N',N''' 1,10-decanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea] trifluoroacetate;~~

~~N',N''' 1,8-octanediylbis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea] trifluoroacetate;~~

~~N',N''' [1,1'-bi(cyclohexyl)-4,4'-diylbis(oxy-2,1-ethanediyl)]bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea];~~

~~N',N''' (dithiodi-3,1-propanediyl)bis[N-(trans-4-{2-[(1R,8S)-11-azatricyclo[6.2.1.0^{2,7}]-undeca-2,4,6-trien-11-yl]ethyl}cyclohexyl)urea] trifluoroacetate and pharmaceutically acceptable salts thereof.~~

3. (Cancelled)

4. (Currently amended) A pharmaceutical composition for the treatment of muscarinic acetylcholine receptor mediated diseases comprising a compound according to claim 1 and a pharmaceutically acceptable carrier thereof.

5. (Cancelled)

6. (Currently amended) A method of treating a muscarinic acetylcholine receptor mediated disease selected from the group consisting of chronic obstructive lung disease, chronic bronchitis, asthma, chronic respiratory obstruction, pulmonary fibrosis, pulmonary emphysema and allergic rhinitis, wherein acetylcholine binds to

~~said receptor~~, comprising administering ~~a safe and~~ an effective amount of a compound according to claim 1.

7. (Cancelled)

8. (Currently amended) A method according to claim ~~7~~ 6 wherein administration is via inhalation via the mouth or nose.

9. (previously presented) A method according to claim 8 wherein administration is via a medicament dispenser selected from a reservoir dry powder inhaler, a multi-dose dry powder inhaler or a metered dose inhaler.

10. (currently amended) A method according to claim 9 wherein the compound is administered to a human ~~and has a duration of action of 12 hours or more for a 1 mg dose~~.

11. (currently amended) A method according to claim 10 wherein the compound has a duration of action of ~~24~~ 12 hours or more.

12. (cancelled)

13. (new) A compound according to Claim 1 wherein G₂ is of formula (a).

14. (new) A compound according Claim 1 wherein Ar is phenyl.

15. (new) A compound according to Claim 14 wherein Y is independently a C₁₋₄ alkyl.

16. (new) A compound according to Claim 15 wherein G¹ is CH=CH.

17. (new) A compound according to Claim 1 wherein G¹ is CH=CH.

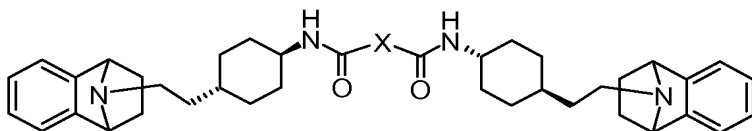
18. (new) A compound according to Claim 1 wherein Ar is furyl, thienyl, pyrrolyl, oxazolyl, thiazolyl, imidazolyl, oxadiazolyl, thiadiazolyl, pyridyl, triazolyl, triazinyl, pyridazyl, pyrimidinyl, pyrazolyl, isothiazolyl, or isoxazolyl.

19. (new) A compound according to Claim 17 wherein Ar is furyl, thienyl, pyrrolyl, oxazolyl, thiazolyl, imidazolyl, oxadiazolyl, thiadiazolyl, pyridyl, triazolyl, triazinyl, pyridazyl, pyrimidinyl, pyrazolyl, isothiazolyl, or isoxazolyl.

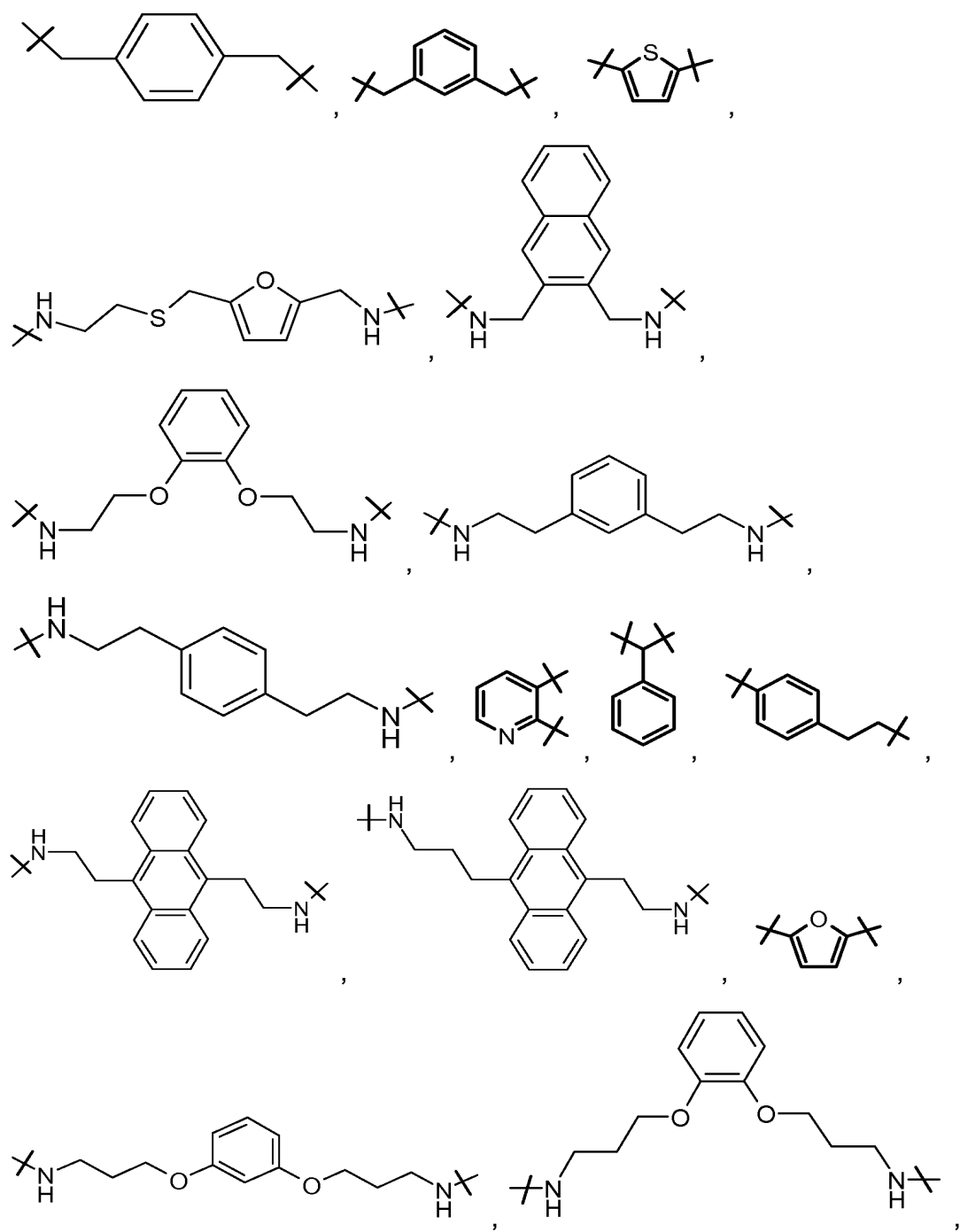
20. (new) A compound according to Claim 1 wherein Ar is naphthyl, indazolyl, indolyl, benzofuranyl, benzothienyl, benzothiazolyl, benzimidazolyl, benzoxazolyl, benzisoxazolyl, benzisothiazolyl, quinoliny, quinoxoliny, quinazoliny, cinnoliny, isoquinoliny, pyrazolo[1,5-a]pyrimidyl, pyrrolo[3,2-b]pyridyl, pyrrolo[3,2-c]pyridyl, thieno[3,2-b]thiophenyl, 1,2-dihydro-2-oxo-quinoliny, 3,4-dihydro-3-oxo-2*H*-benzoxazinyl, or 1,2-dihydro-2-oxo-3*H*-indolyl.

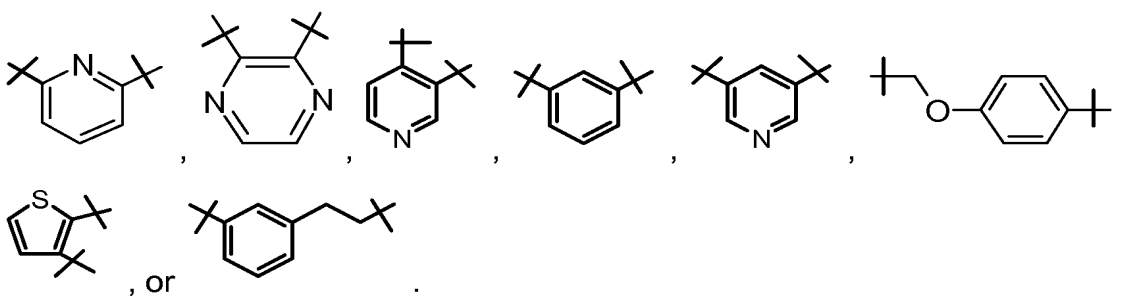
21. (new) A compound according to Claim 17 wherein Ar is naphthyl, indazolyl, indolyl, benzofuranyl, benzothienyl, benzothiazolyl, benzimidazolyl, benzoxazolyl, benzisoxazolyl, benzisothiazolyl, quinoliny, quinoxoliny, quinazoliny, cinnoliny, isoquinoliny, pyrazolo[1,5-a]pyrimidyl, pyrrolo[3,2-b]pyridyl, pyrrolo[3,2-c]pyridyl, thieno[3,2-b]thiophenyl, 1,2-dihydro-2-oxo-quinoliny, 3,4-dihydro-3-oxo-2*H*-benzoxazinyl, or 1,2-dihydro-2-oxo-3*H*-indolyl.

22.(new) A compound of the formula:



wherein X is selected from





23. A pharmaceutical composition comprising a compound according to Claim 22 and a pharmaceutically acceptable carrier.